Volunteer Lake Assessment Program Individual Lake Reports

PLEASANT POND, FRANCESTOWN, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	1,052	**Max. Depth (m):**	6.4	**Flushing Rate (yr^{1}):**	0.9
Surface Area (Ac.):	187	**Mean Depth (m):**	3.2	**P Retention Coef:**	0.76
Shore Length (m):	4,500	**Volume (m^{3}):**	2,394,000	**Elevation (ft):**	817

TROPHIC CLASSIFICATION

Year	Trophic class
1989	OLIGOTROPHIC
2004	MESOTROPHIC

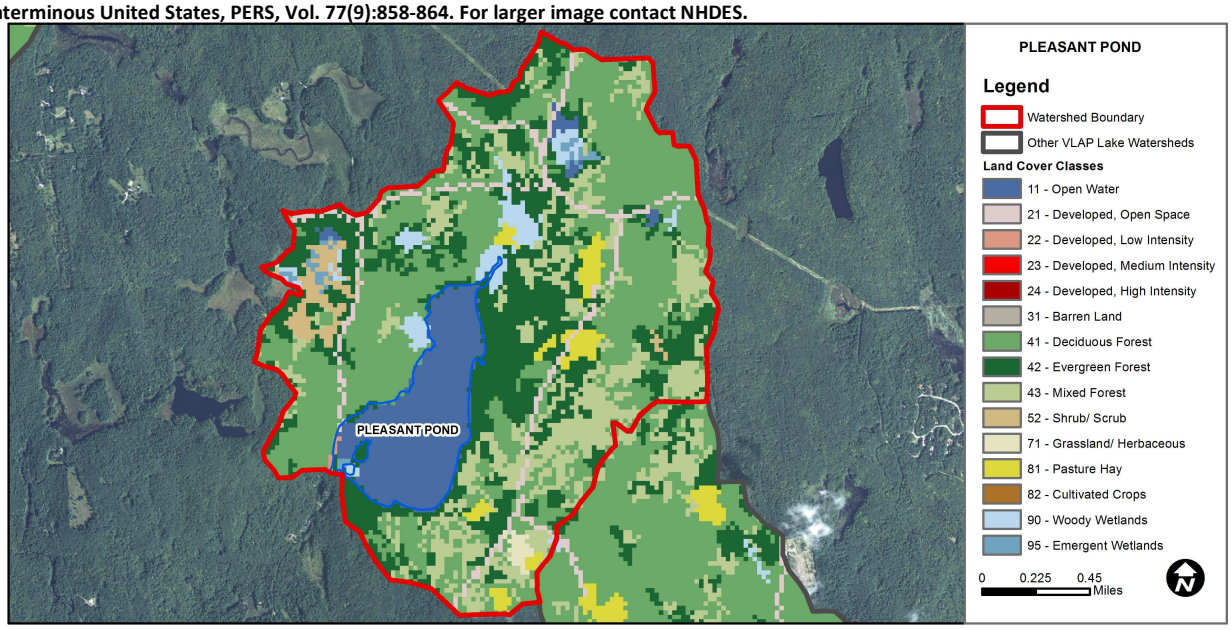
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the DRAFT 2014 305(b) report on the status of N.H. waters, and are based on data collected from 2004-2013. Detailed waterbody assessment and report card information can be found at www.des.nh.gov/organizations/divisions/water/wmb/swqa/index.htm

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Cautionary	The calculated median is fewer than 5 samples but > indicator and the chlorophyll a indicator is okay. More data needed.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Oxygen, Dissolved	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Dissolved oxygen satura	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Chlorophyll-a	Good	The calculated median is from 5 or more samples and is < indicator and > 1/2 indicator.
Primary Contact Recreation	Escherichia coli	Very Good	Where there are no geometric means, all bacteria samples are < 75% of the geometric mean. Where there are geometric means all single bacteria samples are < the SSMC and all geometric means are < geometric mean criteria.
	Chlorophyll-a	Very Good	There are a total of at least 10 samples with 0 exceedances of indicator.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	10.9	Barren Land	0	Grassland/Herbaceous	0.43
Developed-Open Space	3.77	Deciduous Forest	36.19	Pasture Hay	2.22
Developed-Low Intensity	0.11	Evergreen Forest	24.45	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	16.42	Woody Wetlands	3.01
Developed-High Intensity	0	Shrub-Scrub	1.85	Emergent Wetlands	0.68

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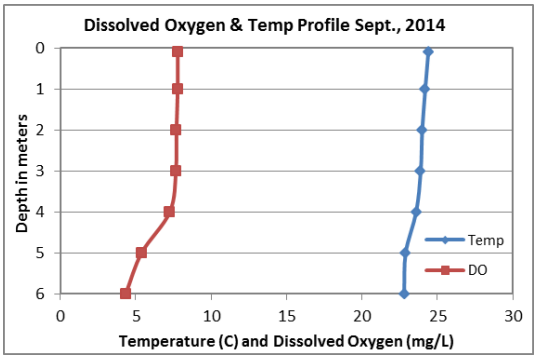
Pleasant Pond, Francestown

2014 Data Summary

Observations and Recommendations (*Refer to Table 1 and Historical Deep Spot Data Graphics)*

- **Chlorophyll-a:** Chlorophyll levels were low and stable from July to August and decreased slightly in September. The 2014 average chlorophyll level was approximately equal to 2012 and 2013 and was less than the state median. Historical trend analysis indicates significantly decreasing (improving) chlorophyll since monitoring began. We hope to see this continue!
- **Conductivity/Chloride:** Deep spot and tributary conductivity levels were low, less than the state median, and stable from July through September. Historical trend analysis indicates stable epilimnetic (upper water layer) conductivity since monitoring began.
- **Total Phosphorus:** Epilimnetic phosphorus was low in July, increased slightly in August and the decreased in September. Average epilimnetic phosphorus increased slightly in 2014 but remained less than the state median. Historical trend analysis indicates significantly decreasing (improving) epilimnetic phosphorus since monitoring began and we hope to see this continue! Hypolimnetic (lower water layer) phosphorus was stable in July and August and decreased slightly in September. North Inlet phosphorus decreased steadily from July through September and average phosphorus levels have decreased in the Inlet since monitoring began. Oulet phosphorus was stable and low throughout the summer.
- **Transparency:** Transparency improved from July through September and was better than the state median. Historical trend analysis indicates stable transparency since monitoring began.
- **Turbidity:** Deep spot and tributary turbidity levels were relatively low and stable throughout the summer.
- **pH:** Epilimnetic pH was within the desirable range of 6.5—8.0 units and historical trend analysis indicates relatively stable epilimnetic pH with moderate variability since monitoring began. Hypolimnetic pH was less than desirable throughout the summer and potentially critical to aquatic life.
- **Recommended Actions:** Pond water quality has improved since monitoring began. Continue to monitor water quality and implement best management practices where applicable to reduce nutrients and other pollutants from entering the pond. The increased frequency and intensity of storm events highlights the importance of managing stormwater runoff. DES' "Homeowner's Guide to Stormwater Management" is a great resource. Keep up the great work!



Station Name	Table 1. 2014 Average Water Quality Data for PLEASANT POND							
	Alk. mg/l	Chlor-a ug/l	Cond. uS/cm	Total P ug/l	Trans. m		Turb. ntu	pH
					NVS	VS		
Epilimnion	3.33	2.29	32.2	9	4.63	4.55	0.74	6.64
Hypolimnion			33.2	12			1.05	6.22
Dam Outlet			33.9	8			0.68	6.25
North Inlet 1			32.7	8			0.60	6.56

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: > 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: between 6.5-8.0 (unless naturally occurring)

Historical Water Quality Trend Analysis

Parameter	Trend	Explanation	Parameter	Trend	Explanation
Conductivity	Stable	Trend not significant; data show low variability.	Chlorophyll-a	Improving	Data significantly decreasing.
pH (epilimnion)	Stable	Trend not significant; data moderately variable.	Transparency	Stable	Trend not significant; data show low variability.
			Phosphorus (epilimnion)	Improving	Data significantly decreasing.